Implementation Support Document
ISD 352-1.0

Manual for Supplemental Procedures for Program and Project Management

Los Alamos National Laboratory

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Introduction

Summary

This Manual provides supplemental procedures to Los Alamos National Laboratory (LANL) workers for managing projects and provides the plan for implementing the direction provided in IMP 351, *Program Management and* IMP 352, *Project Management*.

Purpose

This IMP defines LANL procedures that must be implemented to ensure that programs and projects are planned, developed, and managed in a comprehensive and integrated fashion and that they satisfy all applicable requirements on schedule and within budget requirements. Doing so is in the best interest of the institution in order to meet requirements listed in Appendix G of the prime contract, improve planning and technical execution of programs, balance resource requirements across the institution, improve strategic planning, and better ensures regulatory compliance.

Change Control

The formal process required for revising, reviewing and approving changes to this ISD will be administered by PMD. As specified in IMP 311, *Institutional Policies, Implementing Procedures and Related Documents*, POL has the authority to make corrections or minor revisions to any LANL policy or procedure at any time if required, and will do so for this ISD. However, if the revision to this ISD requires substantial change to any of the processes required to issue Tier 1, or Tier 2 documents, PMD will send out a draft of ISD revisions for review and comment for a specified number of working days. PMD will address the comments and when they have been resolved, ADTS will issue the new revision through POL.

Implementation Plan for Program and Project Management IMPs

(See Attachment 1 Implementation Plan for Program and Project Management IMPs)

Chapter 1 – Activities to Be Performed in Project Phases

Introduction

This Chapter provides a description of the work procedures for each project phase. This description is summarized in Chapter 2 which defines document preparation and approval procedures and Chapter 3, which defines the required content of the phase gate packages. The procedures described below apply to Project Types (PTs) 1, 2, and 3 unless specifically identified as applying to a particular type.

Initiation Phase

During this phase, the Program Manager must determine the project type using Chapter 5 of this ISD and must document this in the program WBS. In addition, the Program Manager must consult with other involved managers and recommend a Project Manager.

The Program Manager, with assistance from the Project Manager, must prepare a project need and justification that describes a current condition or problem, a desired outcome or end- state. The justification must reflect the needs of the program of which the project is a part.

The Program Manager must prepare a PG-0 Package, which documents the outcomes outlined above and includes a preliminary cost and schedule estimate for the entire project and a baseline cost and schedule estimate for the work to PG-2. These estimates must be prepared with the assistance of the Project Manager.

Finally, the Program Manager must issue a work authorization for the entirety of PT1 projects and, as appropriate, for PT2 and PT3 projects.

Planning and Definition Phase

This phase includes formation of the project team, establishment of performance requirements, and initiation of project reporting and utilizes funding provided by the Program Manager.

Team Formation

The Project Manager will form a project team and, for PT3 projects, document team member roles and responsibilities utilizing the checklist in Chapter 4, as modified to fit specific project needs.

Performance Requirements

For all projects, a performance baseline (scope, schedule, cost and associated contingencies) must be established by the Project Manager to provide a method of measuring project progress. For PT1 and 2 projects, the preliminary estimate prepared for PG-0 may be used. A Quality Management Plan for project work must be either adopted or adapted.

For PT3 projects, the Project Manager must

- Define, in detail, the technical work requirements with particular emphasis on defining the project's technical end point. These requirements must reflect the provisions of applicable laws, regulations, and IMPs/LIRs and must describe project technical work required to achieve the end-point. Where work options are available, the PM must describe the selected options or the methods to be used to select options.
- Prepare Risk Analysis and Mitigation, Configuration, and Change Control Plans; and
- Prepare a Project Execution Plan if not already prepared at the Program Sector or Element level.

PG 2 Packages

The work in Sections 2.1 and 2.2 above must be documented in a PG-2 package.
If work has not been authorized beyond PG-2, the necessary work authorizations must be approved by the program manager and issued to the project team.

Reporting

Project reviews must start after PG-0 approval.

Execution Phase

(1) For all projects, the technical products called for in the performance baseline must be prepared and approved by the Project team.
(2) For PT3 projects, the project team must complete any design work and document this in a Final technical Configuration document. The format and content of the document will be determined by the PT3 project team.
(3) The work above must be documented in a PG-4 package.

Closeout Phase

To close the project, the Project Manger must prepare a final monthly cost and schedule report.

Chapter 2 – Required Baseline Documents for Procedures

This Chapter defines the required baseline documents for projects as well as minimum preparation and approval procedures. These are presented on two pages – one for PT1 and 2 projects and the second for PT3 projects.

REQUIRED BASELINE DOCUMENTS FOR PT1 and 2 PROJECTS WITH MINIMUM PREPARATION AND APPROVAL REQUIREMENTS

Project Phase / Responsible Person	Initiation	Definition and Planning		Execution		Transition/Closeout
	Project Need Document / PG-0 package	Quality Management Plan+	Schedule/Budget/Scope Performance Baseline/PG2 Package++	Technical Products	PG4 Package	Final Project Cost/Schedule Report
Project Manager		**P/C**	**P**	**A**	**P**	**P**
Integrated Project Team		**S/C**	**P/C**	**P**	**P/C**	
Project Manager's Division Leader						
Program Manager	P: Project Need for Projects and PG-O A: PG-0 for PT1 and PT2 Projects		A		**A**	**A**
Portfolio Manager						

Note: Preparation of documents noted above for a given project phase must be required before proceeding to the next phase. If the project team is unable to obtain concurrence on an issue or a document, the PM must bring the matter to the program manager for resolution with peers.

P= Prepare/Provide S= Support Preparation C= Concurrence A= Approval

+ Standing or existing QM plan may be adopted or adapted.
++ Preliminary cost estimates prepared for PG-0 may be used.

REQUIRED BASELINE DOCUMENTS FOR PT3 PROJECTS WITH MINIMUM PREPARATION AND APPROVAL REQUIREMENTS

Project Phase / Responsible Person	Initiation	Definition and Planning					Execution			Transition/ Closeout
	Project Need Document / PG-0 package	Team Appointment Letter*	Letter Defining Roles and Responsibilities*	Quality Management Plan +	Technical Requirements and Design Criteria**	Schedule/Budget/Scope Performance Baseline/PG2 Package	Final Technical Configuration	Technical Products	PG-4 Package	Final Project Cost/Schedule Report
Project Manager			P/A	P/C	A**	P	A**	A	P	P
Integrated Project Team		Team Members' Division Leaders Approve Initial Membership	S/C	PS Rep Approves S/C	P/C	P/C	P/C	P/S	P	P/C
Project Manager's Division Leader										
Program Manager	P: Project Need for Projects and PG-O	P: Proposes PM for projects				A			A	A
Portfolio Manager	A: PG-0 for PT3 Projects	A: PM for PT3 Projects ***								

P= Prepare/Provide **S**= Support Preparation **C**= Concurrence **A**= approval

* Updated by the PM throughout the life of the project as necessary
** Within constraints established by the LANL Program Organization
*** Laboratory Director approves PM for projects whose total cost exceeds 10 million dollars.

Note: Preparation of documents noted above for a given project phase must be required before proceeding to the next phase. If the project team is unable to obtain concurrence on an issue or a document, the PM must bring the matter to the program manager for resolution with peers.

+ Standing or existing QM plan must be adopted or adapted

Chapter 3 - Required Elements of Phase Gate Packages

This Chapter defines the required elements of phase gate packages on two pages – one for PT1 and 2 projects and the second for PT3 projects. These packages are submitted by the project manager for program manager approval. To be determined by joint agreement between the program and project managers.

Table 1 - REQUIRED ELEMENTS OF PHASE GATE (PG) PACKAGES FOR PT1 AND 2 PROJECTS

PG-0 Package	PG-2 Package	PG-4 Package
Project Need and Justification Document	**Quality Management Plan**	**Final Technical Product Documentation**
Cost and Schedule Estimate for Project	**Performance Baseline (Cost/Schedule/ Scope) (May use estimate from PG-0 package)**	**Final Technical Configuration (design)**
	Project Execution/Implementation Plan (if required)	
Project Type		
Program WBS		
Recommended Project Manager		

GUIDANCE: A Phase Gate (PG) package includes a letter from a Project Manager to a Program Manager along with the items noted above attached. The letter requests approval to proceed to the next project phase.

NOTE: For projects that create a facility, structure, waste, or excess materials/equipment that will require decommissioning, demolition, or disposal (perhaps many years) after project completion, the cost of this work will be identified as part of the PG-2 package for use and tracking by the program manager.

NOTE: Programs and/or projects may also utilize PG-1 and PG-3 for additional control. The content of these packages will be determined by joint agreement between the program and project managers.
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Table 2 - REQUIRED ELEMENTS OF PHASE GATE (PG) PACKAGES FOR PT3 PROJECTS

PG-0 Package	PG-2 Package	PG-4 Package
Project Need and Justification Document	**Quality Management Plan**	**Final Technical Product Documentation**
Preliminary Cost and schedule for Entire Project	**Performance Baseline (Cost/Schedule/ Scope)**	**Final Technical Configuration (design)**
Cost and Schedule Estimate in PG-2	**Project Execution/Implementation Plan (if required) (If project specific plan required)**	
Project Type	**Technical Requirements and Design Criteria**	
Recommended Project Manager	**Risk Analysis and Mitigation Plan**	
	Roles and Responsibilities Letter	

GUIDANCE: A Phase Gate (PG) package includes a letter from a Project Manager to a Program Manager along with the items noted above attached. The letter requests approval to proceed to the next project phase.

NOTE: For projects that create a facility, structure, waste, or excess materials/equipment that will require decommissioning, demolition, or disposal (perhaps many years) after project completion, the cost of this work will be identified as part of the PG-2 package for use and tracking by the program manager.

NOTE: Programs and/or projects may also utilize PG-1 and PG-3 for additional control. The content of these packages will be determined by joint agreement between the program and project managers.

Chapter 4 – Project Roles and Responsibilities Checklist

This chapter defines the Roles and Responsibilities checklist that is to be used by PT3 projects to define each project team member's roles and responsibilities. It must be modified and adapted by the project team as necessary to fit project scope and needs.

Table 3 - PROJECT ROLES AND RESPONSIBILITIES CHECKLISTS

Phase: Initiation													
Initiation	**Project Team**												
	NA	**Project Manager**	**Tech- User Org-Rep**	**Program Rep.**	**PMD Rep**	**DOE Rep.**	**HSR Organization Rep.**	**SUP Rep.**	**Facility Manager Rep.**	**PS Rep.**	**Security Rep**	**IPT as a Whole**	**Comments**
Prepare the Project Need document													
Document project need related to program mission													
Prepare Program Requirements Document													
Document planning and integrate funding among Laboratory projects													
Perform funding determination													
Prepare PG-0 package													
Preliminary NEPA Strategy													
Preliminary Acquisition Plan													
Prepare Safeguards and Security Requirements													

P= Prepare/Provide **S**= Support Preparation **R** = Reviews **C**= Concurrence **A**= approval

PROJECT ROLES AND RESPONSIBILITIES CHECKLISTS

Phase: Development and Planning													
Development and Planning	**Project Team**												
	NA	**Project Manager**	**Project Owning Organization Rep.**	**Program Office Rep.**	**PMD Rep**	**DOE Rep.**	**ESH Organization Rep.**	**SUP Rep.**	**Facility Manager Rep.**	**PS Rep.**	**Security Rep**	**IPT as a Whole**	**Comments**
Identify, document, and assign the project team leader													
Select team members and document responsibilities													
Identify and develop preliminary project procedures and issue procedures to IPT members													
Authorize project related work in writing													
Develop and document Technical Requirements and Design Criteria													
Identify and prepare project definition studies or feasibility studies													
Prepare Project Safeguard and Security Plan and conduct Vulnerability analysis													

Phase: Development and Planning (continued)													
Development and Planning	**Project Team**												
	NA	**Project Manager**	**Project Owning Organization**	**Program Office Rep.**	**PMD Rep.**	**DOE Rep.**	**ESH Organization**	**SUP Rep.**	**Facility Manager Rep.**	**PS Rep.**	**Security Rep.**	**IPT as a Whole**	**Comments**
Identify, review, and incorporate lessons learned from similar projects													
Document project interfaces and integration with other projects													
Prepare preliminary project schedule and rough order of magnitude (ROM) of the total project cost													
Perform and document hazard analysis (LIR 300-00-06)													
Identify and document natural phenomena hazards (NPH) if applicable													
Identify and document mitigation performance category if applicable													
Prepare safety strategy													
Prepare waste minimization plan if applicable													
Identify and document safeguards and security requirement s													
Conduct and document project risk assessment													

Phase: Development and Planning (continued)													
Development and Planning	**Project Team**												
	NA	**Project Manager**	**Tech- User Org- Rep**	**Program Rep.**	**PMD Rep**	**DOE Rep.**	**HSR Organization Rep.**	**SUP Rep.**	**Facility Manager Rep.**	**PS Rep.**	**Security Rep**	**IPT as a Whole**	**Comments**
Define and document project acquisition plan													
Prepare Project Quality Management Plan													
Prepare Systems Engineering Management Plan													
Prepare Project Records Management Plan													
Prepare Project Configuration Management Plan													
Prepare WBS and WBS dictionary													
Identify, assess, and document conceptual technical alternatives													
Develop and document design criteria that encompass applicable standards and requirements													
Form Change Control Board (CCB)													
Conduct monthly baseline reviews													
Prepare and submit monthly project status reports													
Conduct and document technical review													
Prepare schedule and budget to project completion													

PROJECT ROLES AND RESPONSIBILITIES CHECKLISTS

Phase: Development and Planning (continued)													
Development and Planning	**Project Team**												
	Not Applicable (NA)	Project Manager	Project Owning Organization Rep.	Program Office Rep.	PMD Rep	DOE Rep.	ESH Organization Rep.	SUP Rep.	Facility Manager Rep.	PS Rep.	Security Rep	IPT as a Whole	**Comments**
Prepare and submit necessary environmental plans and permits													
Prepare project safety plan													
Identify and document roles and responsibilities for work control													
Prepare PG-1 package													
Prepare Staffing Plan													
Prepare PG-2 Package													

Phase: Execution													
Execution	**Project Team**												
	Not Applicable (NA)	Project Manager	Project Owning Organization Rep.	Program Office Rep.	PMD Rep	DOE Rep.	ESH Organization Rep.	SUP Rep.	Facility Manager Rep.	PS Rep.	Security Rep	IPT as a Whole	Comments
Conduct and document final technical work													
Security System design and Vulnerability Analysis report and Material Control and Accountability plan, if required													
Prepare PG-3 package													
Finalize Safety Analysis Report													
Conduct and document pre-solicitation meeting(s)													
Review and document the acceptance of vendor submittals													
Approve work authorization request(s)													
Prepare PG-4 package													
Develop operations and maintenance procedures													
Prepare safety and security plan for operations													
Finalize/complete Authorization Basis documents													
Update Security Plan (if required)													

Phase: Closeout													
Close Out	**Project Team**												
	Not Applicable (NA)	Project Manager	Project Owning Organization Rep.	Program Office Rep.	PMD Rep	DOE Rep.	ESH Div. Rep	SUP Rep...	Facility Manager Rep.	PS Rep.	Security Rep	IPT as a Whole	Comments
Document lessons learned													
Complete project records and files													
Complete financial closeout													

Chapter 5 – Project Type and Complexity Determination

This Chapter defines the procedures for determining project type, complexity, and also defines project manager certification criteria that derive from project type and complexity. The following steps are to be used to determine a project complexity rating and, for non-capital asset acquisition projects, the project types.

The following steps are to be used to determine a project complexity rating and, for non-capital asset requisition projects, the project types.

1. Review the project attributes (Table 4) and place a number in the appropriate complexity column. Score 0 for low complexity, 1 for medium, and 2 for high. Use the definitions of low, medium, and high in Table 5.

Table 4 - Project attributes

Attribute	Complexity
Funding Source Expectations	
Organizational Integration	
Public Exposure	
First-of-a-Kind Risk	
Difficult to Define Scope Early	
Number of Funding Sources	
Schedule Difficulty	
Safety and Security	
Total	

2. Total the complexity ratings to get project complexity:
3. Project types correspond to the following totals:
   PT1: Complexity <8 and total project cost <$5M
   PT2: Complexity <8 and total project cost >$5M and <$20M
   PT3: All others

The following table must be used to determine levels of difficulty:

Table 5 - Determine levels of difficulty:

Project Attribute	Low Rating	Medium Rating	High Rating
Funding Source Expectations	Routine oversight of progress	Component of larger program requires increased oversight & control. Funding external to Lab.	Key component of larger program. Oversight intense, requirements hard. Funding external to Lab.
Organizational Integration	Little integration required	Integration between Lab organizations	Integration between multiple Labs or numerous organizations to Lab.
Public Exposure	Little to no probability general public interested.	General public will have an interest in the project	Project will have widespread interest in the general public
First-of-a-Kind Risk	Project does not involve R&D aspects	R&D minimal and low risk	Significant R&D with associated risk
Difficult to Define Scope Early	Requirements well defined early in planning	A few project requirements cannot be defined early. No significant cost or schedule risk	Many key requirements cannot be defined early. Significant cost and schedule risk
Number of Funding Sources	Single source	Multiple sources, single agency	Multiple agencies
Schedule Difficulty	Typical constraints, no significant added risk	Schedule requirements add to the risk	Tight and aggressive schedule requirements add significantly to the risk
Safety and Security	No security issues, standard safety concerns	Complicating safety or security concerns	Out of the ordinary concerns for both safety and security, (i.e. nuclear facility)

Table 6 must be used to determine the required project type and certification level for the project manager (and/or deputy): Specifically, the total project cost or annual project budget and the project complexity rating will be used to determine type and certification criteria.

Table 6 -Determine project type and certification level for project manager (and/or deputy):

Complexity Rating / Cost	0-3	4-7	8-11	12-16
TPC> $75M, $40M <APB	Level III	Level IV	Level IV	Level IV
$75M.>TPC>$20M $10M<APB<$40M	Level II	Level III	Level III or IV	Level IV
$20M>TPC>$5M $3M<APB<$10M	Level II	Level II	Level II or III	Level III
TPC <$5M APB<$3M	Level I DL Discretion	Level I or II DL Discretion	Level II	Level III

TPC = Total Project Cost
APB = Annual Project Budget

Shaded area indicates Project Type 1 (<$5M) or Type 2 (>$5M and <$20M). Non shaded area indicates Type 3 projects.

The determinations about individuals meeting the criteria for certification levels I through IV must be made by procedures established by the PM Council.

Exceptions to project type and project manager certification criteria to accommodate unique or special circumstances must be approved by the Portfolio Manager.

Chapter 6 – Summary of Project Management Process Procedures

This Chapter summarizes in the two following tables the project management process procedures for PT1, PT2, and PT3 projects. It supplements the process procedures in IMP 352.

Table 7 - PROJECT MANAGEMENT PROCESS SUMMARY

	Project Type 1 and Project Type 2	Project Type 3
Project Designations	Program manager defines WBS, project type, recommends project manager	Same
Integrated Project Team Formation	Project Manger's Division Leader (PT2) or Group Leader (PT1) approves PM who assembles team as necessary	PM proposed by program manager, approved by Portfolio Manger, Team members include: PM, PS Rep Technical User Rep Program Rep SUP Rep Customer Rep if possible CFO Rep HSR Rep Security Rep Project Management Rep
Project Control, Reporting	WBS at project level or below Cost collection to WBS elements Cost/Schedule estimates. Planning down at least one level with activities for PG packages for PT2 only. No depth of planning requirements for PT1 Time phased budget. Work Authorization (may be issued by program manager for entire project). Earned Value Management System. LOE acceptable. Reports to include cost, schedule, completion variances and status. Monthly for PT2 and quarterly for PT1.	Cost/schedule detail at least as great as PT2. WBS with assignment of elements to individuals
Technical Baseline Documents	Deliverables or products, quality management plan, PG packages	Documents specified include projects need, team appointment letter, roles and responsibilities letter, quality management plan, cost and schedule baseline, PG packages, Change Control. Plan, Configuration Control Plan, Risk Management Plan
Work Control and ISM	Use LANL IMPs	Same
IPT Training	PM Certified – DL discretion for PT1	Same
Risk		Document risks and mitigations
Change Control		Use PMD Procedure 109, *Project Controls*, or equivalent
Reviews	Quarterly Program Manager organizes (PT2) or reviews reports (PT1)	Monthly Program Manager organizes

Chapter 7 – Project Type 3 (PT3) Team Formation

This Chapter defines the Roles and Responsibilities Check List that is to be used by PT3 projects to define each project team member's roles and responsibilities

This Chapter supplements the team formation procedures for PT3 projects.

After consultation with involved management, the Project Manager must be proposed by the project-owning program manager and approved, using relevant Human Resource Division procedures, by the responsible Portfolio Manger when approval of the Project Need (PG-0) is obtained. For projects whose total cost exceeds 100 million dollars, the Laboratory Director or his/her designee must approve the PM. The PM will work with division and group management to establish the Integrated Project Team (IPT). The team's membership must be documented by letter with approval by the members' division leaders. Division leader approval will mean that the division's team member is available to perform the assigned scope and is qualified to represent the Division.

Guidance: Organizations should track assignments for personnel to assure they are not overcommitted.

Guidance: The PM should plan for and devote sufficient time to a project to ensure that he/she is providing meaningful project leadership and that the requirements of the sponsor, the program and this IMP are met.

IPTs must initially include the PM and, unless it is clear that an organization will not have a role on the project, members from the following stakeholder organizations:

a) Technical user organization, and/or the facility management organization;
b) Responsible program office;
c) SUP-Supply Chain Management Division (if the project includes significant subcontracting and/or purchasing needs);
d) Customer, if possible;
e) CFO-Chief Financial Officer Division;
f) HSR-Health, Safety and Radiation Division;
g) S-Safeguards and Security Division;
h) PM-Project Management Division; and
i) PS-Performance Surety Division

If the IPT determines that another organization performs a significant role over the life of the project, that organization must have a member on the IPT.

The Roles and Responsibilities Checklist (Chapter 4) – must be used, with modifications as required to meet project-specific needs to determine required roles and responsibilities. If the Roles and Responsibilities Checklist indicates an initial team member is not required on a project, that member need not participate on the project team. Consultation with DOE and the Project or Program Execution Plan must be used to thoroughly define project activities.

Chapter 8 – Project Control, Reporting, and Closeout

This Chapter provides supplemental procedures for project control, reporting, and closeout.

Project teams must have in place the following: [PMBOK 6 and 7]

(1) a WBS that links to (flows from) the program element WBS. PT1 and 2 projects need not define WBS detail below the project level;
(2) an assignment of responsibility for the WBS elements to specific individuals (cost account managers). Required for PT3 projects only;
(3) a cost collection system that assigns costs to specific WBS elements, including subcontractor costs;
(4) detailed cost estimates, including labor, material, etc., (to at least level 6; one level below the level for the whole project with at least three activities for the PG packages for PT2 Projects) (no level requirements for PT1 projects);
(5) a Schedule Baseline, with activity durations and schedule logic (to at least level 6 which includes, as a minimum, milestones for the three phase gate approvals for PT2) (no level requirements for PT1);
(6) a time-phased representation of the entire budget;
(7) a work authorization system (i.e. work packages) (Program Manager may issue work authorization for the entirety of PT1 and 2 projects);
(8) an earned value management system

PMD Procedure 109, *Project Controls*, or an equivalent must be used for generating and maintaining this material.

Guidance: For multi-year projects, particularly those funded annually, two approaches are possible to maintain a project-like work effort. One is to establish realistic end-of-year milestones and to manage the multi-year project as a series of single year projects. The second approach is to establish a multi-year project baseline with the current year planned in detail and future years planned at a high level. At the beginning of a new year, the baseline is changed to include detailed plans for the upcoming year.

On a monthly basis, each PT2 and 3 project team must provide a report containing the following: (see PMD Procedure 109, *Project Controls)* [PMBOK 10]

(1) schedule status;
(2) cost status;
(3) cost variance
(4) schedule variance
(5) an estimate at completion
(6) the variance at completion
(7) a variance analysis report (VAR) for variances that exceed the variance threshold(s) established by the sponsoring program manager.

PT1 projects must provide a report containing this material quarterly and must download actual cost data to project management software monthly.

These reports must convey cost and schedule performance data to the project's management team, program manager, customers, and any stakeholders considered appropriate by the PM.

PT1 and 2 projects must be reviewed at least quarterly. PT3 projects must be reviewed monthly. Program Sector or Element Managers will organize these reviews (PT2 and 3) or review the reports (PT1). Program Managers must require more frequent reviews when necessary to meet sponsor requirements.

Chapter 9 – Risk, Change Control, Configuration Management, and Technical Baseline Documents for PT3 Projects

This Chapter provides supplementary procedures for PT3 Projects.

Project Risk for PT3 Projects [PMBOK 11]

Project scope, cost, and schedule risks must be identified, quantified and managed by the Project Team. Risk management strategies must be developed and implemented. Both the risks and management strategies must be documented. PMD Procedure 104, *Risk Assessment and Management*, or an alternative must be used. There are no formal risk requirements for PT1 and PT2 projects.

Change Control for PT3 Projects [PMBOK 4]

Change Control must be maintained through a Change Control Board or other required methods of change control. PMD Procedure 109, *Project Controls*, or an alternate must be used. There are no formal change control requirements for PT1 and PT2 projects.

Configuration Management for PT3 Projects [PMBOK 4]

A configuration management process must be established that controls changes to the technical basis or configuration of the project. PMD Procedure 107, *Configuration Change Control,* or an alternate must be used. There are no formal configuration management requirements for PT1 and PT2 projects.

Project Technical Baseline Documents for PT3 Projects

Baseline documents must be developed at the beginning of a project (starting with the Project Need statement), maintained and updated throughout the life of the project, and issued as individual documents. Baseline documents that must be placed under change control for each phase of the project are shown in Chapter 2.

Attachment (1)

Implementation Plan for Program and Project Management IMPs

Purpose and Limitations

This attachment serves as the plan for implementing the direction provided in IMP 351, *Program Management*, and IMP 352, *Project Management*, for Los Alamos National Laboratory programs and projects that fall under the specified IMPs.

References

- IP 350, Program, *Project, and Line Relationships*
- IMP 351, *Program Management*
- IMP 352, *Project Management*
- PMD Procedure 109, *Project Controls*
- DOE O 413.3, *Program and Project Management for the Acquisition of Capital Assets*

Definitions

A complete Glossary of Terms is provided at:

http://pmweb.lanl.gov/pdfs/PMGlossaryofTerms.pdf

Responsibilities

The Project Management Division Leader (PMDL) shall be responsible for leading and coordinating LANL's efforts to implement the Program and Project IMPs and IP.

The Associate Director for Technical Services (ADTS) shall serve as the sponsor for LANL's efforts to implement the Program and Project IMPs and IP.

The Deputy Director for National Security is responsible for LANL's Enabling Goal J to improve resource management. Improving program and project management is part of Goal J.

Procedural Steps

The implementation of the Program and Project Management IMPs will take place over two years, and will include the following:

- Earned Value Certification
- Training
- Software/Hardware advancements
- Program and Project Implementation
- Communications
- Project Management Office

The schedule for the first three and last two bullets is contained in Attachment A, while a schedule outline for Program and Project Implementation is contained in Attachment B.

Earned Value Certification The University of California Office of the President (UCOP) has initiated an effort to have each of its National Laboratories (Berkley, Livermore, and Los Alamos) qualify for a facility Earned Value Certification, produced by the Defense Contract Management Agency, in coordination with the U.S. Department of Energy's Office of Engineering and Construction Management (OECM). A slate of four (4) major projects is being reviewed in the Spring of 2005.

An on-going effort will be required for surveillance of earned value compliance. Attendance at project reviews and surveillance reviews of specific projects will be required. This will require FY06 G&A funding.

Attachment (1)

Implementation Plan for Program and Project Management IMPs

Training
The Project Management Division (PMD) has prepared a 4-hour training class for the IMP, which is the same as Module 8 of the course used to prepare personnel for taking the Project Management Institute's (PMI's) Project Management Professional (PMP) certification examination. All of the programs and project personnel who will use the IMPs are required to take the Module 8 class. Preparations for and the teaching of this class will require FY06 G&A funding.

In addition, the IMPs require Project Manager certification. The Project Management Council has approved the detailed requirements for certification at four levels. These requirements include the following:

- Passing the Project Management Institute's examination for certification as a Project Management Professional (PMP®). LANL is currently teaching an 8-module exam preparation course. Preparations and teaching will require FY06 G&A funding.

- A Certification Review Board will need to be formed in FY06 to administer the certification process established by the PM Council. This will include establishing procedures for granting certification and actually reviewing applications. This will require FY06 G&A funding.

Software/Hardware Maintenance
The standard software configuration for performing the functions called out in IMPs consists of the following:

- Cost estimates can be developed in WinEst®, LANL's Work Package Generator, or in Primavera Project Planner® (P3e).
- Integrated Cost and Schedule Baselines reside in P3e.
- PRISM© is used to report module earned value.

Prototypes of these tools are available on computer servers that are maintained by the Project Management Division and the Nuclear Weapons Program. Individual licenses are allocated and coordinated through the Project Controls Group (PM-4) Office. G&A funding will be required in FY06 to supplement program funding for the development and maintenance of these institutional prototypes.

The IMPs and IP do not require that software be used to combine projects into program elements, elements into sectors, or sectors into programs when preparing monthly progress reports. Instead, status data can be manually entered into the PRISM reporting tool. However, if programs choose to use software, the configurations to be used are specified by the IMPs as noted above. The Enterprise Project and PMD are coordinating so that project management features are properly considered by the enterprise software.

Targeted Projects
The IMP requires compliance with its provisions. The plan is to establish Work Breakdown Structures (WBSs) for all Laboratory programs within four months and then move one-third of LANL projects to (at least) Phase Gate (PG)-0 statuses within one year. The remaining two-thirds would be moved to PG-0 status within two years. A draft schedule outline is shown in Attachment B. Additional detail to the project level will need to be added by the six LANL programs.

Communications
Extensive communications about the implementation of these IMPs has already taken place and has included the following:

a) Two Director memoranda on the subject
b) Presentations to the Executive Board and LIM
c) Four-hour training courses on the IMP
d) Review of the IMPs by broad external and internal audiences.

When the IMPs are approved, previous communications will be supplemented with the following:

a) A LIM presentation
b) A News Bulletin article

Attachment (1)

Implementation Plan for Program and Project Management IMPs

Implementation Support Office

Many organizations that implement program and project management use a Project Management Office to mentor program and project managers and establish standards. A minimal office for LANL would include two experienced program or project managers with administrative and communications support. This would require FY06 G&A funding.

Cost
Estimated costs for the work outlined above are as follows:

Training - $391K
Implementation Support Team - $370K
Certification Review Board - $224K
Software/Hardware Maintenance - $314K

Total - $1.3M

These do not include $484K of estimated costs for work to respond to Project Management Maturity Assessment recommendations as they do not result directly from LANL's adoption of the IMP management processes.

It is expected that the annual costs in the long term for maintaining the infrastructure for project and program management will be approximately $1M/year.

Charts

a) FY05/06 Program and Project Management Implementation
b) Specific Program and Project Implementation

CHART A
FY05/06 Program and Project Management Implementation

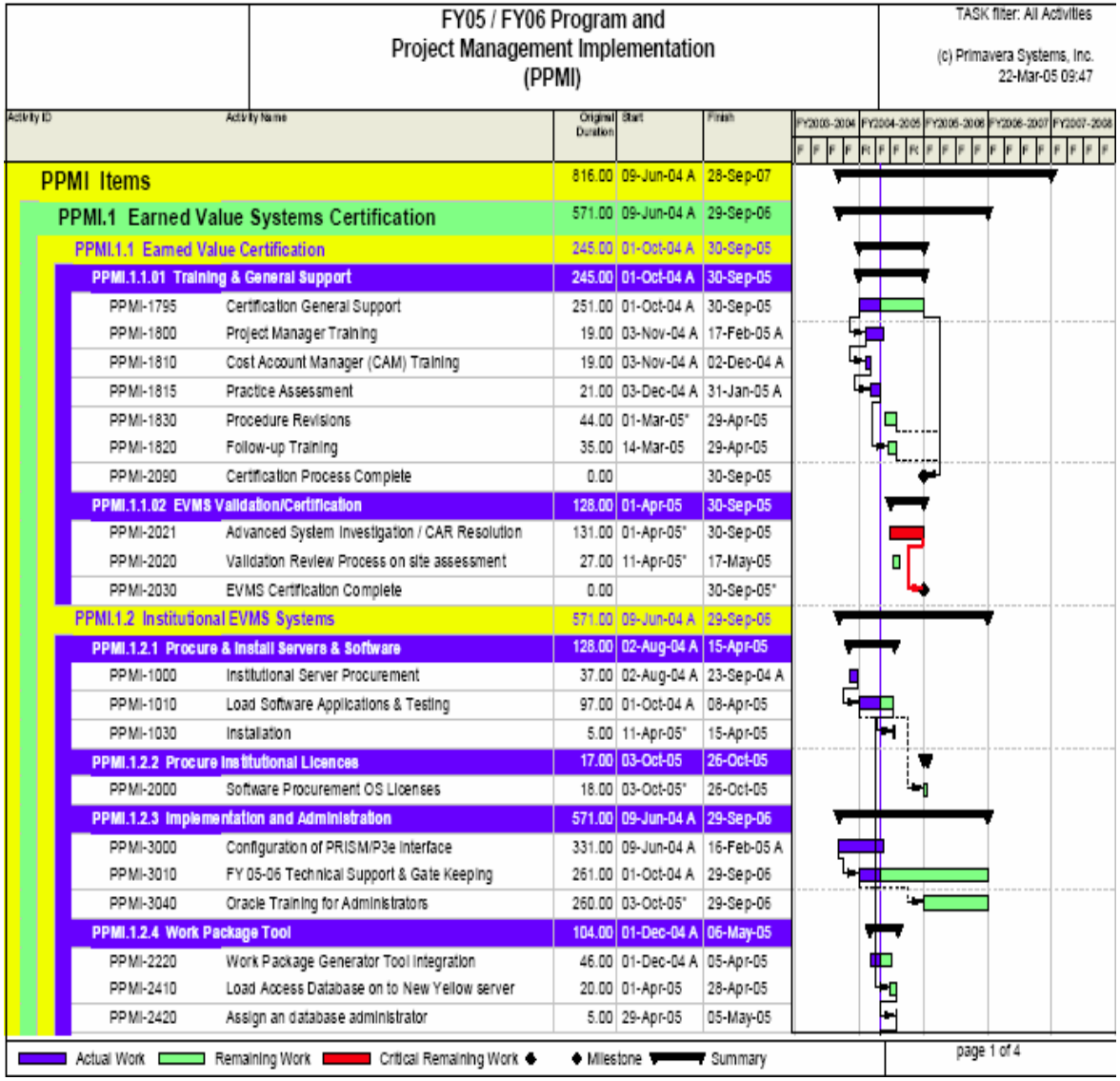
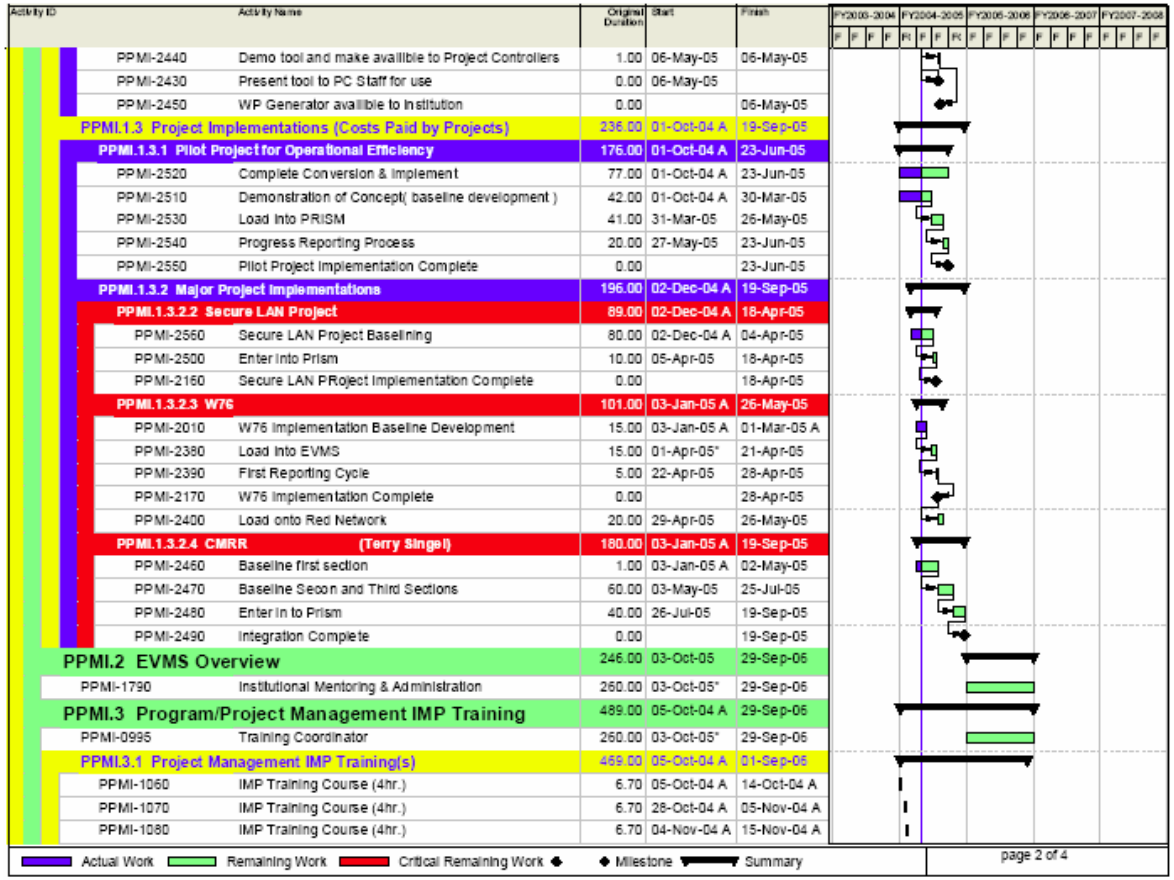


CHART A
FY05/06 Program and Project Management Implementation



Activity ID	Activity Name	Original Duration	Start	Finish
PPMI-2440	Demo tool and make availible to Project Controllers	1.00	06-May-05	06-May-05
PPMI-2430	Present tool to PC Staff for use	0.00	06-May-05	
PPMI-2450	WP Generator availible to Institution	0.00		06-May-05
PPMI.1.3	Project Implementations (Costs Paid by Projects)	236.00	01-Oct-04 A	19-Sep-05
PPMI.1.3.1	Pilot Project for Operational Efficiency	176.00	01-Oct-04 A	23-Jun-05
PPMI-2520	Complete Conversion & Implement	77.00	01-Oct-04 A	23-Jun-05
PPMI-2510	Demonstration of Concept(baseline development)	42.00	01-Oct-04 A	30-Mar-05
PPMI-2530	Load Into PRISM	41.00	31-Mar-05	26-May-05
PPMI-2540	Progress Reporting Process	20.00	27-May-05	23-Jun-05
PPMI-2550	Pilot Project Implementation Complete	0.00		23-Jun-05
PPMI.1.3.2	Major Project Implementations	196.00	02-Dec-04 A	19-Sep-05
PPMI.1.3.2.2	Secure LAN Project	89.00	02-Dec-04 A	18-Apr-05
PPMI-2560	Secure LAN Project Baselining	80.00	02-Dec-04 A	04-Apr-05
PPMI-2500	Enter Into Prism	10.00	05-Apr-05	18-Apr-05
PPMI-2160	Secure LAN PRoject Implementation Complete	0.00		18-Apr-05
PPMI.1.3.2.3	W76	101.00	03-Jan-05 A	26-May-05
PPMI-2010	W76 Implementation Baseline Development	15.00	03-Jan-05 A	01-Mar-05 A
PPMI-2380	Load Into EVMS	15.00	01-Apr-05*	21-Apr-05
PPMI-2390	First Reporting Cycle	5.00	22-Apr-05	28-Apr-05
PPMI-2170	W76 Implementation Complete	0.00		28-Apr-05
PPMI-2400	Load onto Red Network	20.00	29-Apr-05	26-May-05
PPMI.1.3.2.4	CMRR (Terry Singel)	180.00	03-Jan-05 A	19-Sep-05
PPMI-2460	Baseline first section	1.00	03-Jan-05 A	02-May-05
PPMI-2470	Baseline Secon and Third Sections	60.00	03-May-05	25-Jul-05
PPMI-2480	Enter In to Prism	40.00	26-Jul-05	19-Sep-05
PPMI-2490	Integration Complete	0.00		19-Sep-05
PPMI.2	EVMS Overview	246.00	03-Oct-05	29-Sep-06
PPMI-1790	Institutional Mentoring & Administration	260.00	03-Oct-05*	29-Sep-06
PPMI.3	Program/Project Management IMP Training	489.00	05-Oct-04 A	29-Sep-06
PPMI-0995	Training Coordinator	260.00	03-Oct-05*	29-Sep-06
PPMI.3.1	Project Management IMP Training(s)	469.00	05-Oct-04 A	01-Sep-05
PPMI-1060	IMP Training Course (4hr.)	6.70	05-Oct-04 A	14-Oct-04 A
PPMI-1070	IMP Training Course (4hr.)	6.70	28-Oct-04 A	05-Nov-04 A
PPMI-1080	IMP Training Course (4hr.)	6.70	04-Nov-04 A	15-Nov-04 A

CHART A
FY05/06 Program and Project Management Implementation

Activity ID	Activity Name	Original Duration	Start	Finish
PPMI-1090	IMP Training Course (4hr.)	6.70	18-Nov-04 A	30-Nov-04 A
PPMI-1100	IMP Training Course (4hr.)	6.70	02-Dec-04 A	09-Dec-04 A
PPMI-1110	IMP Training Course (4hr.)	0.00	01-Apr-05*	01-Apr-05
PPMI-2600	IMP Training Course (4hr.)	0.00	01-Jul-05*	01-Jul-05
PPMI-2610	IMP Training Course (4hr.)	0.00	03-Oct-05*	03-Oct-05
PPMI-3220	IMP Training Course (4hr.)	0.00	01-Nov-05*	01-Nov-05
PPMI-3230	IMP Training Course (4hr.)	0.00	01-Dec-05*	01-Dec-05
PPMI-3240	IMP Training Course (4hr.)	0.00	02-Jan-06*	02-Jan-06
PPMI-3250	IMP Training Course (4hr.)	0.00	01-Feb-06*	01-Feb-06
PPMI-3260	IMP Training Course (4hr.)	0.00	01-Mar-06*	01-Mar-06
PPMI-3270	IMP Training Course (4hr.)	0.00	03-Apr-06*	03-Apr-06
PPMI-3280	IMP Training Course (4hr.)	0.00	01-May-06*	01-May-06
PPMI-3290	IMP Training Course (4hr.)	0.00	01-Jun-06*	01-Jun-06
PPMI-3300	IMP Training Course (4hr.)	0.00	03-Jul-06*	03-Jul-06
PPMI-3310	IMP Training Course (4hr.)	0.00	01-Aug-06*	01-Aug-06
PPMI-3320	IMP Training Course (4hr.)	0.00	01-Sep-06*	01-Sep-06
PPMI.3.2 PMP Prep Classes		426.13	05-Oct-04 A	03-Jul-06
PPMI-0005	PMP Prep Class No. 1	0.13	05-Oct-04 A	05-Oct-04 A
PPMI-0004	PMP Overview	88.88	06-Oct-04 A	07-Feb-05 A
PPMI-0010	PMP Prep Class No. 2	0.13	12-Oct-04 A	12-Oct-04 A
PPMI-0020	PMP Prep Class No. 3	0.13	19-Oct-04 A	19-Oct-04 A
PPMI-0030	PMP Prep Class No. 4	0.13	26-Oct-04 A	26-Oct-04 A
PPMI-0040	PMP Prep Class No. 5	0.13	02-Nov-04 A	02-Nov-04 A
PPMI-0050	PMP Prep Class No. 6	0.13	09-Nov-04 A	09-Nov-04 A
PPMI-0060	PMP Prep Class No. 7	0.13	16-Nov-04 A	16-Nov-04 A
PPMI-2280	Work with Public Affairs to advertise next session	8.00	17-Nov-04 A	02-Dec-04 A
PPMI-0070	PMP Prep Class No. 8	0.13	23-Nov-04 A	23-Nov-04 A
PPMI-2270	Revise PM Prep class for January	66.60	24-Nov-04 A	08-Mar-05 A
PPMI-0080	PMP Prep Class No. 1	0.13	18-Jan-05 A	18-Jan-05 A
PPMI-0110	PMP Prep Class No. 4	0.13	01-Feb-05 A	01-Feb-05 A
PPMI-0090	PMP Prep Class No. 2	0.13	01-Feb-05 A	01-Feb-05 A
PPMI-0100	PMP Prep Class No. 3	0.13	02-Feb-05 A	02-Feb-05 A
PPMI-0120	PMP Prep Class No. 5	0.13	22-Feb-05 A	22-Feb-05 A
PPMI-0130	PMP Prep Class No. 6	0.13	01-Mar-05 A	01-Mar-05 A

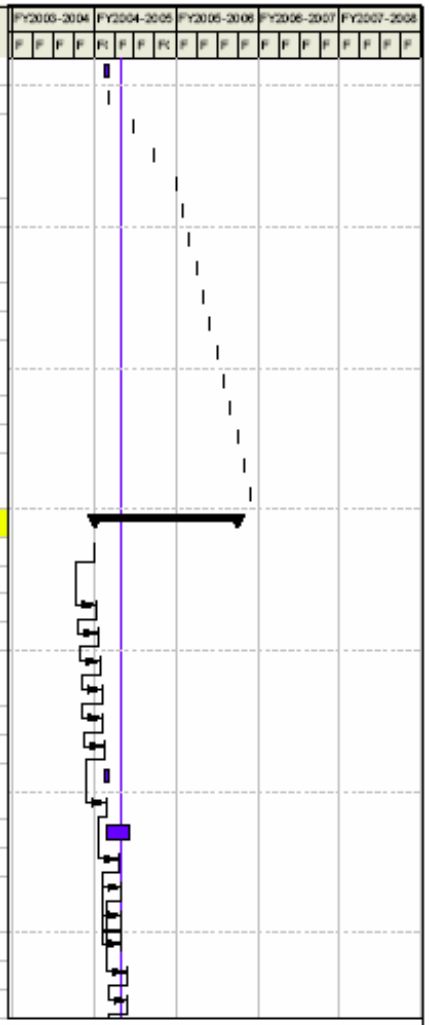
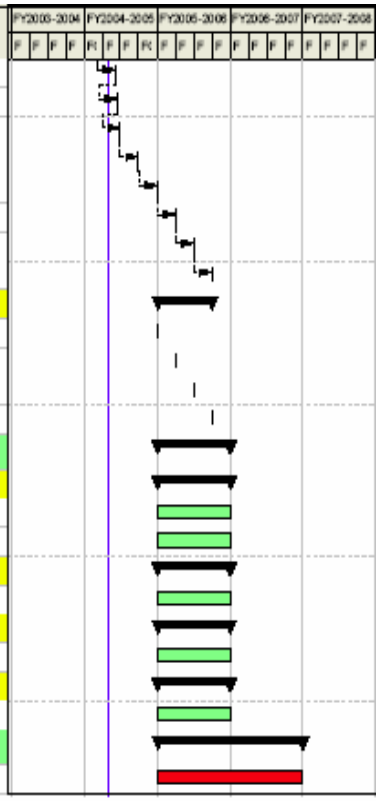


CHART A
FY05/06 Program and Project Management Implementation

Activity ID	Activity Name	Original Duration	Start	Finish
PPMI-0140	PMP Prep Class No. 7	0.13	08-Mar-05*	08-Mar-05
PPMI-0150	PMP Prep Class No. 8	0.13	15-Mar-05*	15-Mar-05
PPMI-0160	PMP Prep Class (3rd quarter)	0.13	01-Apr-05*	01-Apr-05
PPMI-0170	PMP Prep Class (4th quarter)	0.13	01-Jul-05*	01-Jul-05
PPMI-0180	PMP Prep Class (1st quarter)	0.13	03-Oct-05*	03-Oct-05
PPMI-0190	PMP Prep Class (2nd quarter)	0.13	02-Jan-06*	02-Jan-06
PPMI-0200	PMP Prep Class (3rd quarter)	0.13	03-Apr-06*	03-Apr-06
PPMI-0210	PMP Prep Class (4th quarter)	0.13	03-Jul-06*	03-Jul-06
PPMI.3.4	Software Tool Training	184.00	03-Oct-05	03-Jul-06
PPMI-2180	Software Training (1st quarter)	1.00	03-Oct-05*	03-Oct-05
PPMI-2190	Software Training (2nd quarter)	1.00	02-Jan-06*	02-Jan-06
PPMI-2200	Software Training (3rd quarter)	1.00	03-Apr-06*	03-Apr-06
PPMI-2210	Software Training (4th quarter)	1.00	03-Jul-06*	03-Jul-06
PPMI.4	Certification Review Board	246.00	03-Oct-05	29-Sep-06
PPMI.4.1	Administration	246.00	03-Oct-05	29-Sep-06
1740	Set Up and Organize Meetings	260.00	03-Oct-05*	29-Sep-06
1760	Maintain Certification Web page	260.00	03-Oct-05*	29-Sep-06
PPMI.4.2	Procedures	246.00	03-Oct-05	29-Sep-06
2070	Procedure Development	260.00	03-Oct-05*	29-Sep-06
PPMI.4.3	Review of Applications	246.00	03-Oct-05	29-Sep-06
2080	Applications Reviews	260.00	03-Oct-05*	29-Sep-06
PPMI.4.4	Meetings	246.00	03-Oct-05	29-Sep-06
1390	CRB Meetings	260.00	03-Oct-05*	29-Sep-06
PPMI.6	Maturity Assessment Follow-Up	491.00	03-Oct-05	28-Sep-07
1780	Implementing Recommendations	520.00	03-Oct-05*	28-Sep-07



Actual Work Remaining Work Critical Remaining Work Milestone Summary

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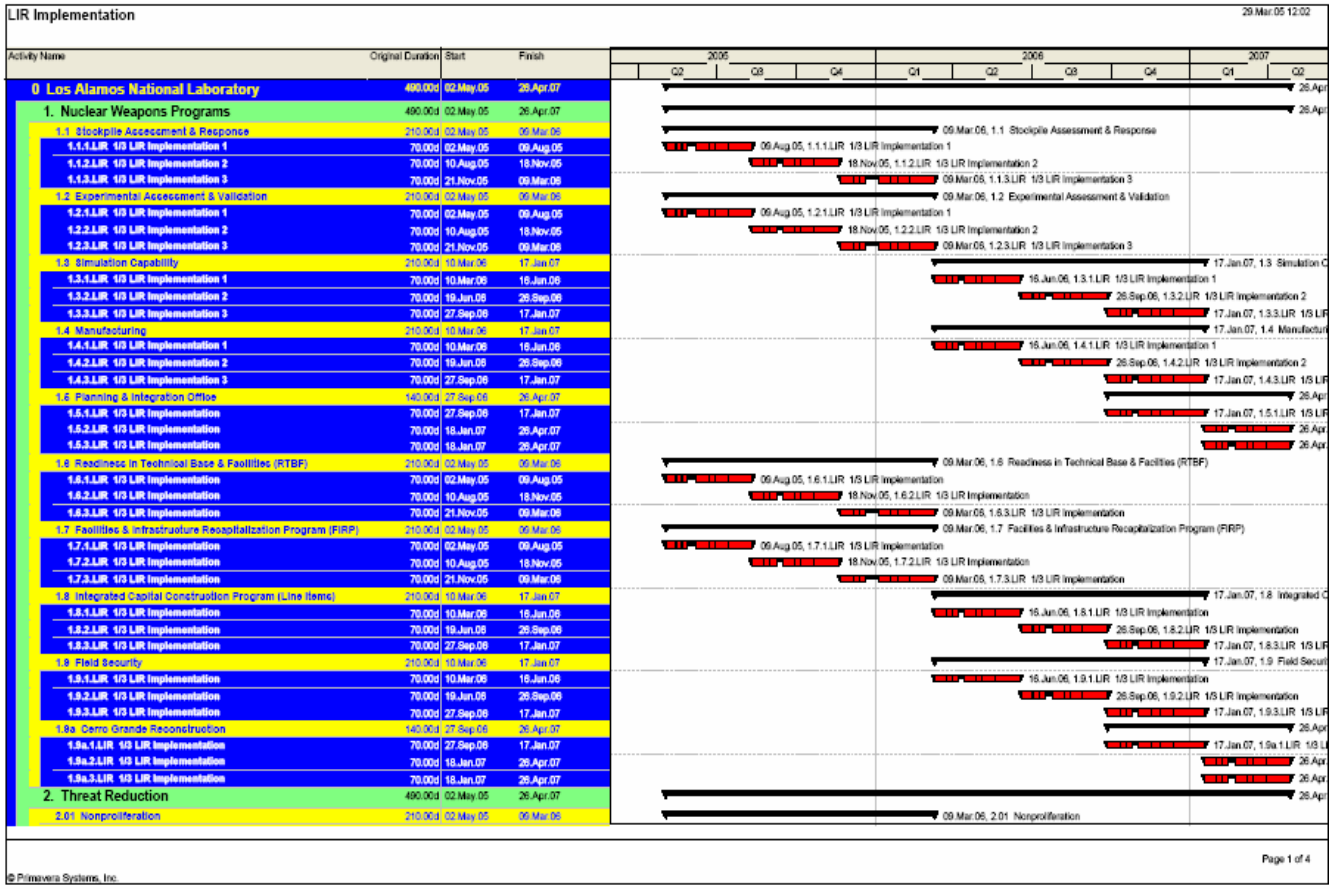
CHART B
Specific Program and Project Management



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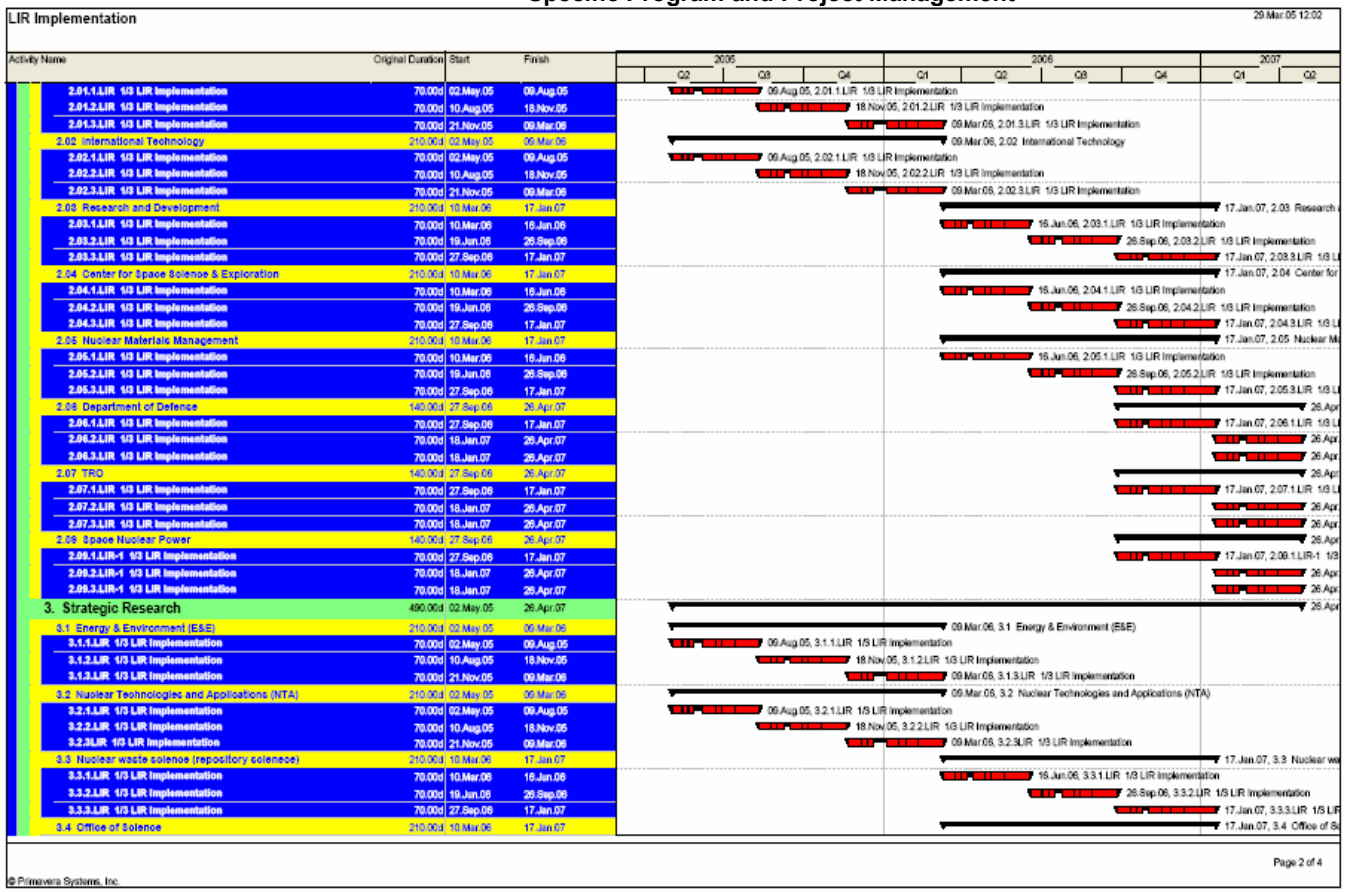

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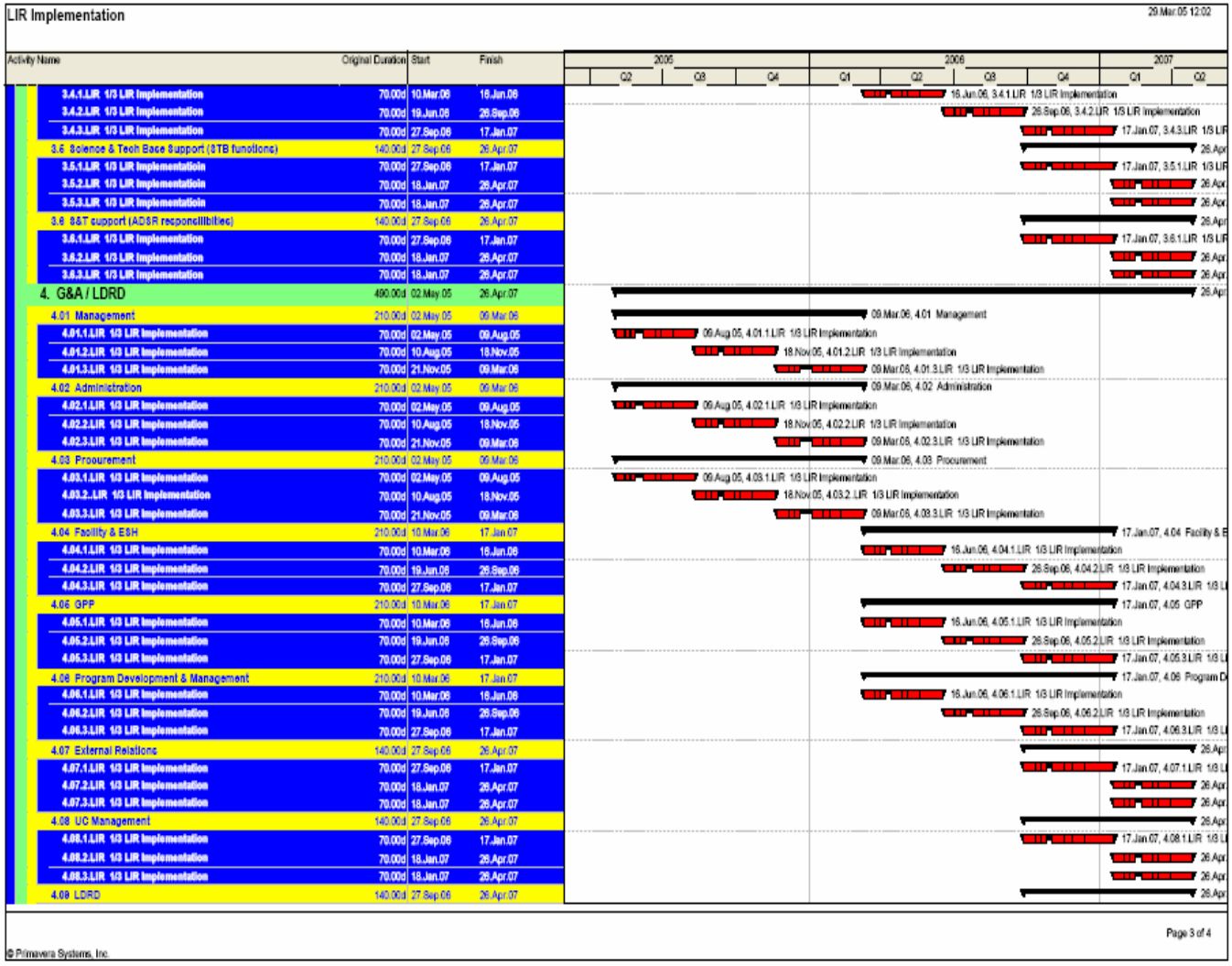

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